



# Proposed Air Pollution Transport Rule

- Reducing Air Pollution
- Protecting Public Health

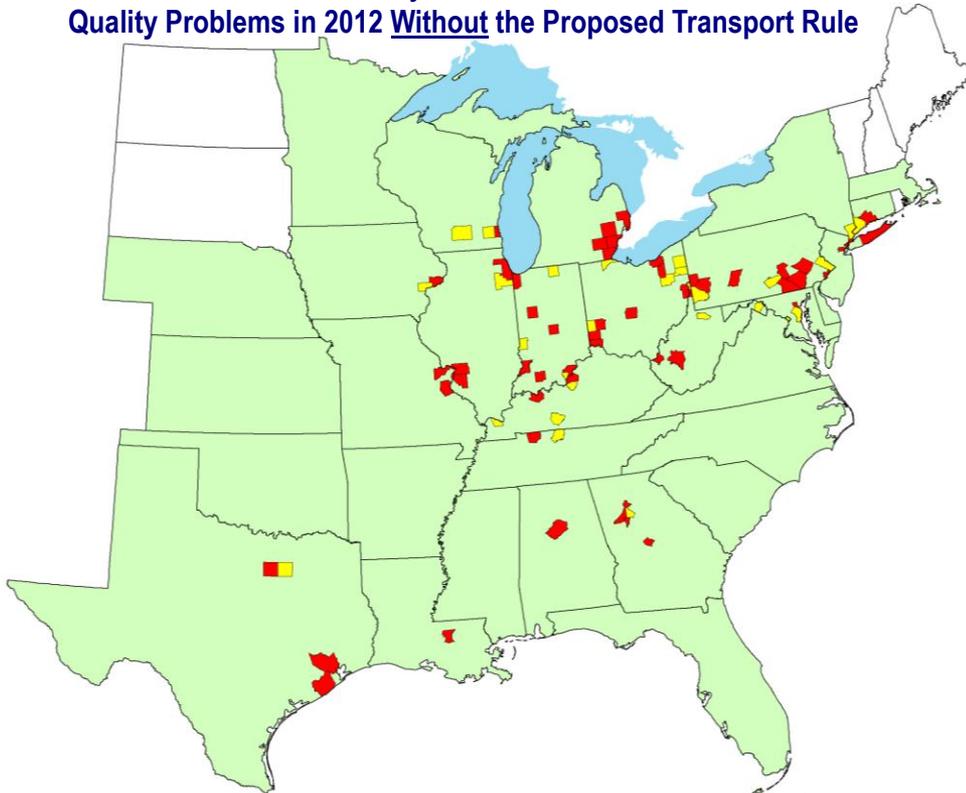


*Presentation for Endicott House*

U.S. Environmental Protection Agency  
Office of Air and Radiation  
August 25, 2010

# Why Is EPA Doing this Rule?

Counties with Monitors Projected to Have Ozone and/or PM<sub>2.5</sub> Air Quality Problems in 2012 Without the Proposed Transport Rule



 Counties with Violating PM and/or Ozone Monitors (55)

 Counties with PM and/or Ozone Maintenance Problems (28)

 States covered by the Transport Rule (31 + DC)

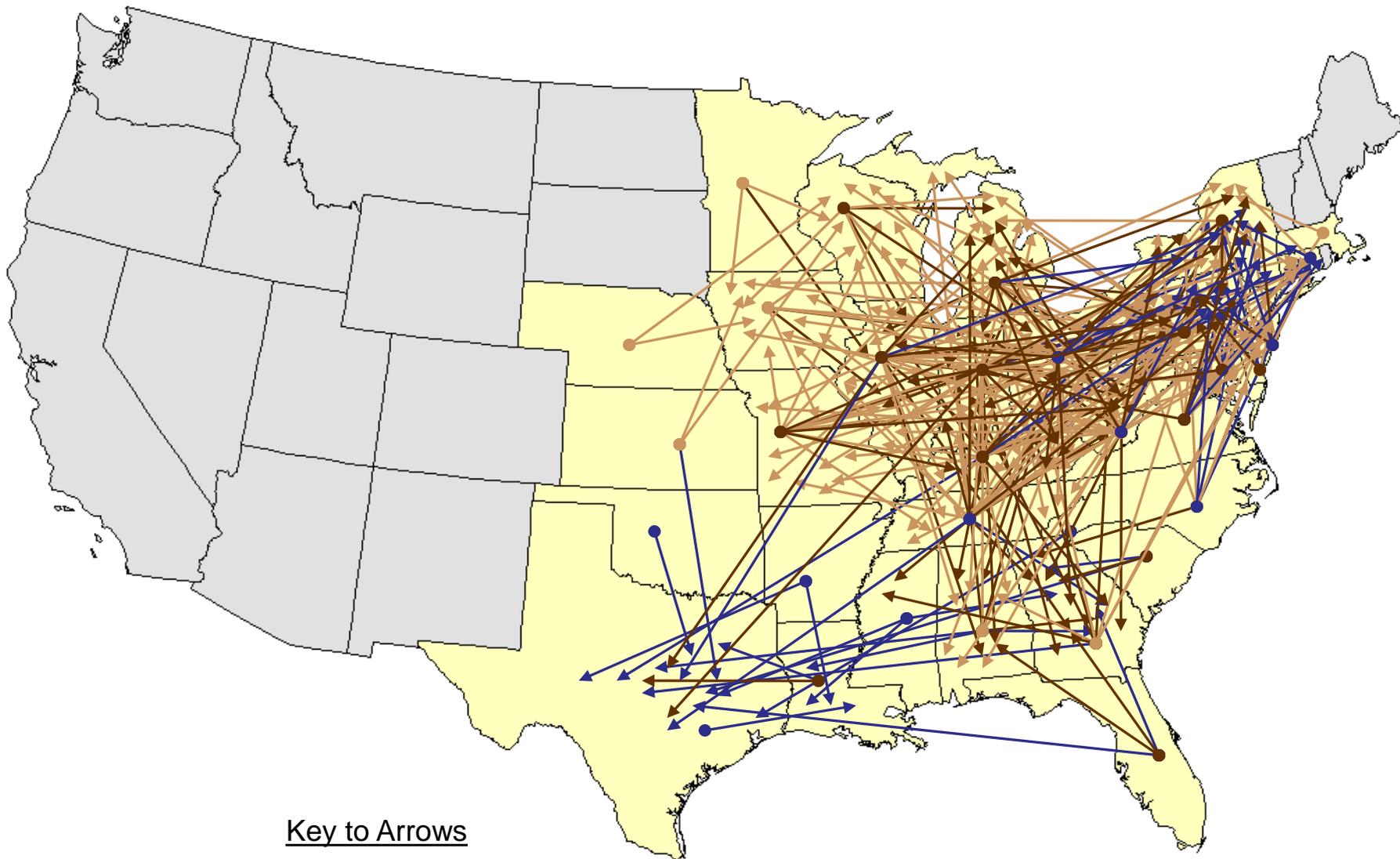
- **In 2012, EPA projects that:**
  - Some communities will still not meet the air quality standards.
  - Many upwind states will still contribute significantly to downwind nonattainment areas.
- **This proposal affects power plants because their emission reductions are most cost-effective.**
- **Other actions by EPA and the states must be taken before all areas will attain the current and future National Ambient Air Quality Standards (NAAQS).**

This analysis assumes that the Clean Air Interstate Rule is not in effect. It does reflect other federal and state requirements to reduce emissions contributing to ozone and fine particle pollution that were in place as of February 2009.

# Proposal Responds to Court Remand

- The methodology used to measure each state's significant contribution to another state:
  - emphasizes air quality (as well as cost considerations) and uses state-specific data and information, and
  - gives independent meaning to the phrase “interfere with maintenance” in section 110(a)(2)(D) of the Clean Air Act.
- The state budgets for SO<sub>2</sub>, annual NO<sub>x</sub>, and ozone season NO<sub>x</sub> are directly linked to the measurement of each state's significant contribution and interference with maintenance.
- The proposed remedy includes provisions to assure that all necessary reductions occur in each individual state.
- The compliance deadlines are coordinated with the attainment deadlines for the relevant NAAQS.
- EPA proposes to allow within-state trading and limited interstate trading to ensure that, in each state, the emissions that significantly contribute to downwind air quality problems will be eliminated.

# 2012 Air Quality Transport: States Linked to Downwind Air Quality Problem



## Key to Arrows

- Linkage of Upwind to Downwind for Ozone ●→
- Linkage of Upwind to Downwind for Annual PM<sub>2.5</sub> ●→
- Linkage of Upwind to Downwind for 24 hour PM<sub>2.5</sub> ●→

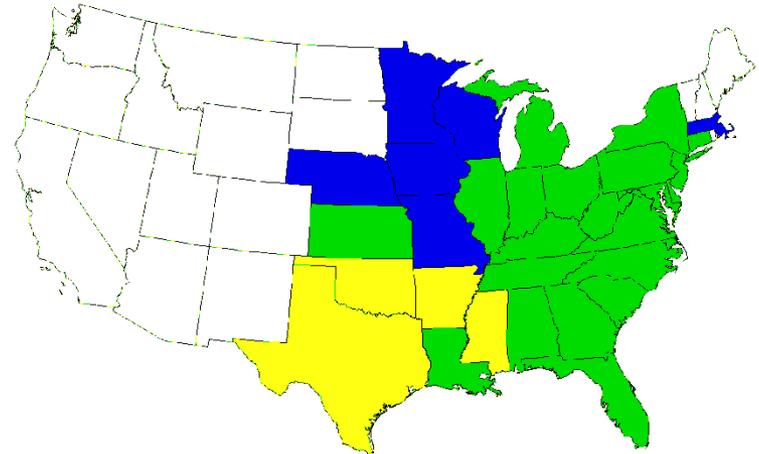
# Transport Rule Replaces CAIR

This proposal:

- Responds to the Court ruling remanding the 2005 CAIR and the 2006 CAIR Federal Implementation Plans (FIPs).
- Addresses the December 2008 court decision.
  - The decision kept the requirements of CAIR in place temporarily and directed EPA to issue a new rule addressing the provisions of the Clean Air Act concerning the transport of air pollution across state boundaries.
- Focuses on the transport problem for the 1997 Ozone and PM<sub>2.5</sub> NAAQS and 2006 PM<sub>2.5</sub> NAAQS (for Daily PM<sub>2.5</sub>)
- Achieves emissions reductions beyond those originally required by CAIR through additional air pollution reductions from power plants beginning in 2012.

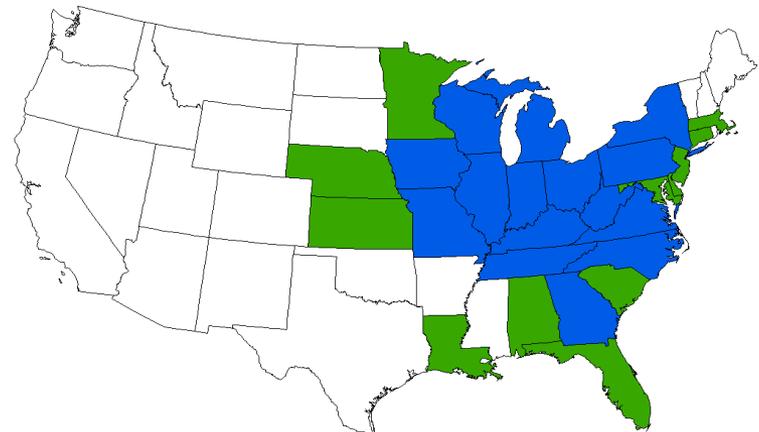
# Four Separate Control Regions

- Proposal includes separate requirements for:
  - NO<sub>x</sub> reductions (2012)
  - Ozone-season NO<sub>x</sub> reductions (2012)
- Sets emissions budgets for each state



■ States controlled for both fine particles (annual SO<sub>2</sub> and NO<sub>x</sub>) and ozone (ozone season NO<sub>x</sub>) (21 States + DC)  
■ States controlled for fine particles only (annual SO<sub>2</sub> and NO<sub>x</sub>) (6 States)  
■ States controlled for ozone only (ozone season NO<sub>x</sub>) (4 States)  
■ States not covered by the Transport Rule

- Proposal includes separate requirements for:
  - Annual SO<sub>2</sub> reductions
    - Phase I (2012) and Phase II (2014)
  - Two Control Groups
    - Group 1 – 2012 cap lowers in 2014
    - Group 2 – 2012 cap only
- Sets emissions budgets for each state



■ SO<sub>2</sub> group 1 (15 States)  
■ SO<sub>2</sub> group 2 (12 States + DC)  
 States in both groups are covered for annual NO<sub>x</sub>

## Key Elements of Proposed Transport Rule

- EPA is proposing one approach and taking comment on two alternatives. All three approaches would cover the same states – 31 states and the District of Columbia, set a pollution limit (or budget) for each state and obtain the reductions from power plants.
  1. EPA's preferred approach -- allows intrastate trading and limited interstate trading among power plants but assures that each state will meet its pollution control obligations.
  2. In the first alternative, trading is allowed only among power plants within a state.
  3. In the second alternative, EPA specifies the allowable emission limit for each power plant and allows some averaging of emission rates.

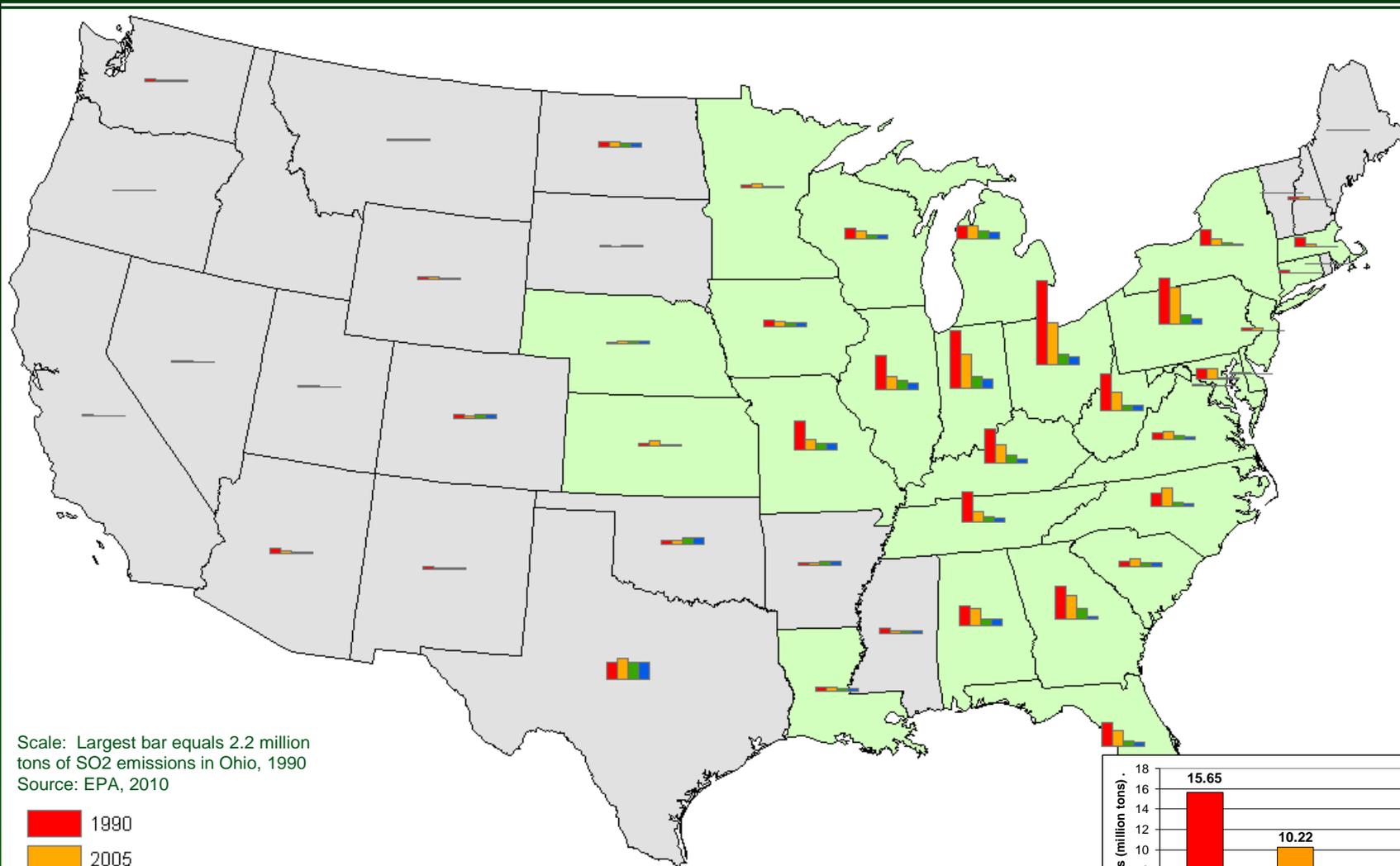
# Key Elements of Proposed Transport Rule (con't)

- To assure emissions reductions happen quickly, EPA is proposing federal implementation plans, or FIPs, for each of the states covered by this rule.
  - A state may choose to develop a state plan to achieve the required reductions, replacing its federal plan, and may choose which types of sources to control.
- Proposal defines upwind state obligations to reduce pollution significantly contributing to downwind nonattainment areas based on:
  - the magnitude of a state's contribution,
  - the cost of controlling pollution from various sources, and
  - the air quality impacts of reductions.

# Significant NO<sub>x</sub> and SO<sub>2</sub> Reductions from Transport Rule Proposal

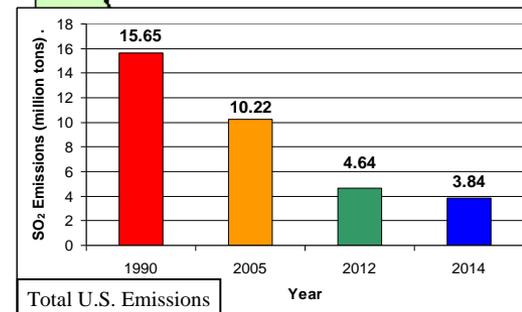
- By 2014, EPA modeling projects that implementation of the Transport Rule, as proposed, combined with other state and EPA actions, would reduce 2005 emissions from electric generating units in the covered states by:
  - 6.3 million tons of SO<sub>2</sub> per year
  - 1.4 million tons of NO<sub>x</sub> per year
    - 300,000 tons of NO<sub>x</sub> during ozone season (included in NO<sub>x</sub> estimate above)
- These reductions represent a 71% reduction in SO<sub>2</sub> and a 52% reduction in NO<sub>x</sub> emissions from power plants from 2005 levels in the covered states.
- In the states and DC covered by the proposed Transport Rule, in 2014, SO<sub>2</sub> emissions would be capped at 2.5 million tons per year annually and NO<sub>x</sub> emissions would be capped at 1.4 million tons per year (ozone season NO<sub>x</sub> emissions will be capped at 600,000 tons per year).

# Annual SO<sub>2</sub> Power Plant Emissions 1990-2014 \*



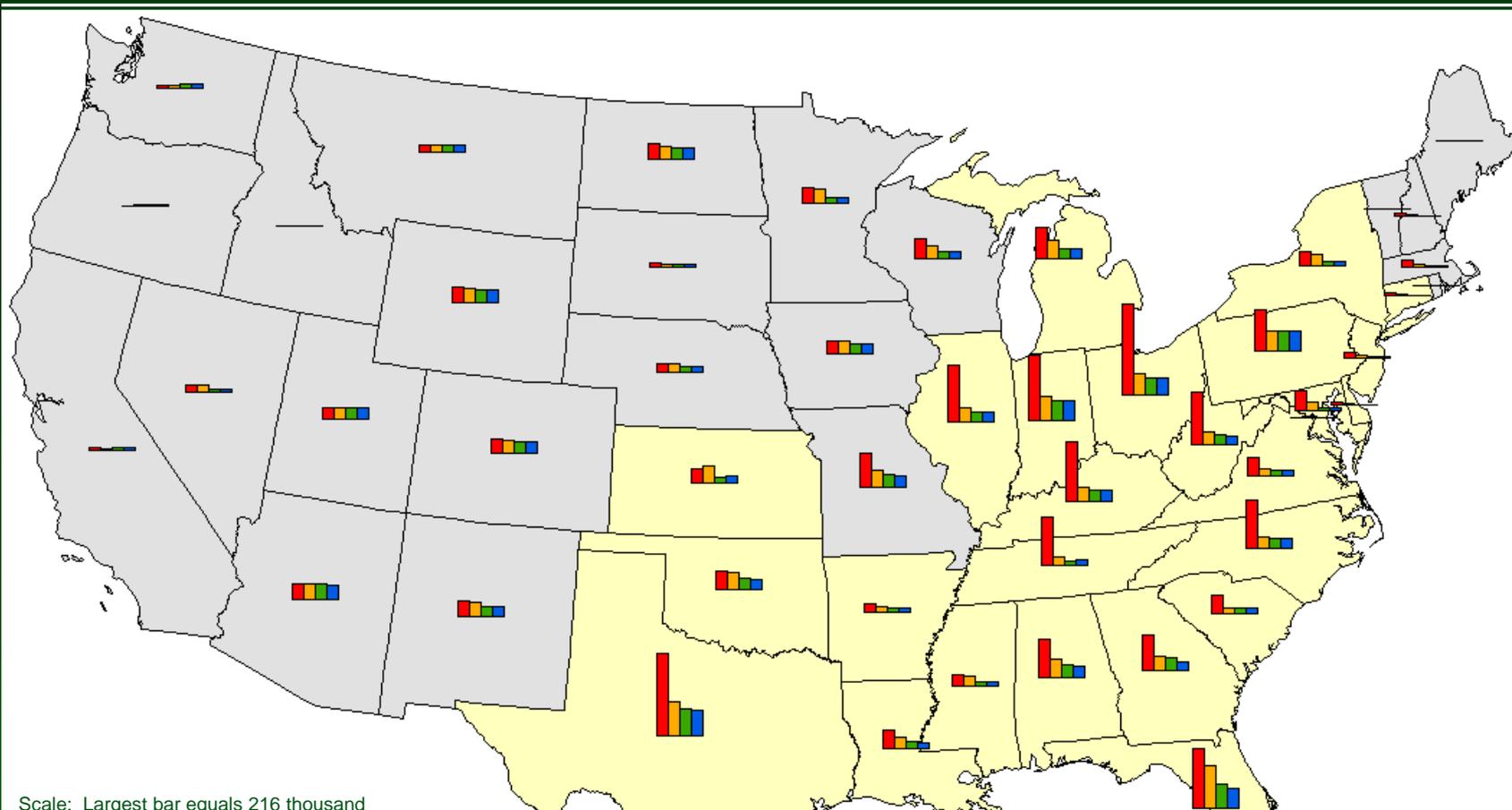
Scale: Largest bar equals 2.2 million tons of SO<sub>2</sub> emissions in Ohio, 1990  
Source: EPA, 2010

- 1990
- 2005
- 2012 Proposed Remedy
- 2014 Proposed Remedy
- States controlled for fine particles (annual SO<sub>2</sub> and NO<sub>x</sub>) (27 States + DC)
- States not covered for fine particles

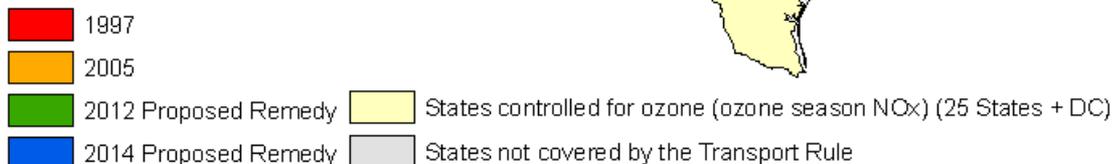


\* Emissions shown include only Acid Rain Program sources -- for 97% of annual Transport Rule SO<sub>2</sub> emissions and 88% of Transport Rule units in 2014.

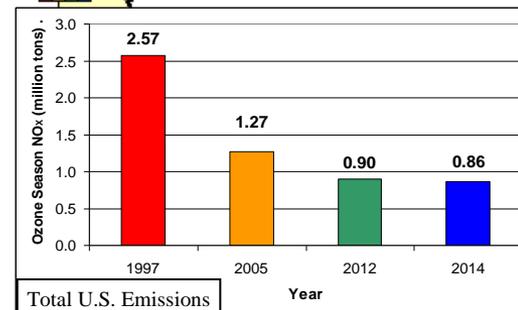
# Ozone Season NO<sub>x</sub> Power Plant Emissions 1997-2014 \*



Scale: Largest bar equals 216 thousand tons of ozone season NO<sub>x</sub> emissions in Ohio, 1997  
Source: EPA, 2010



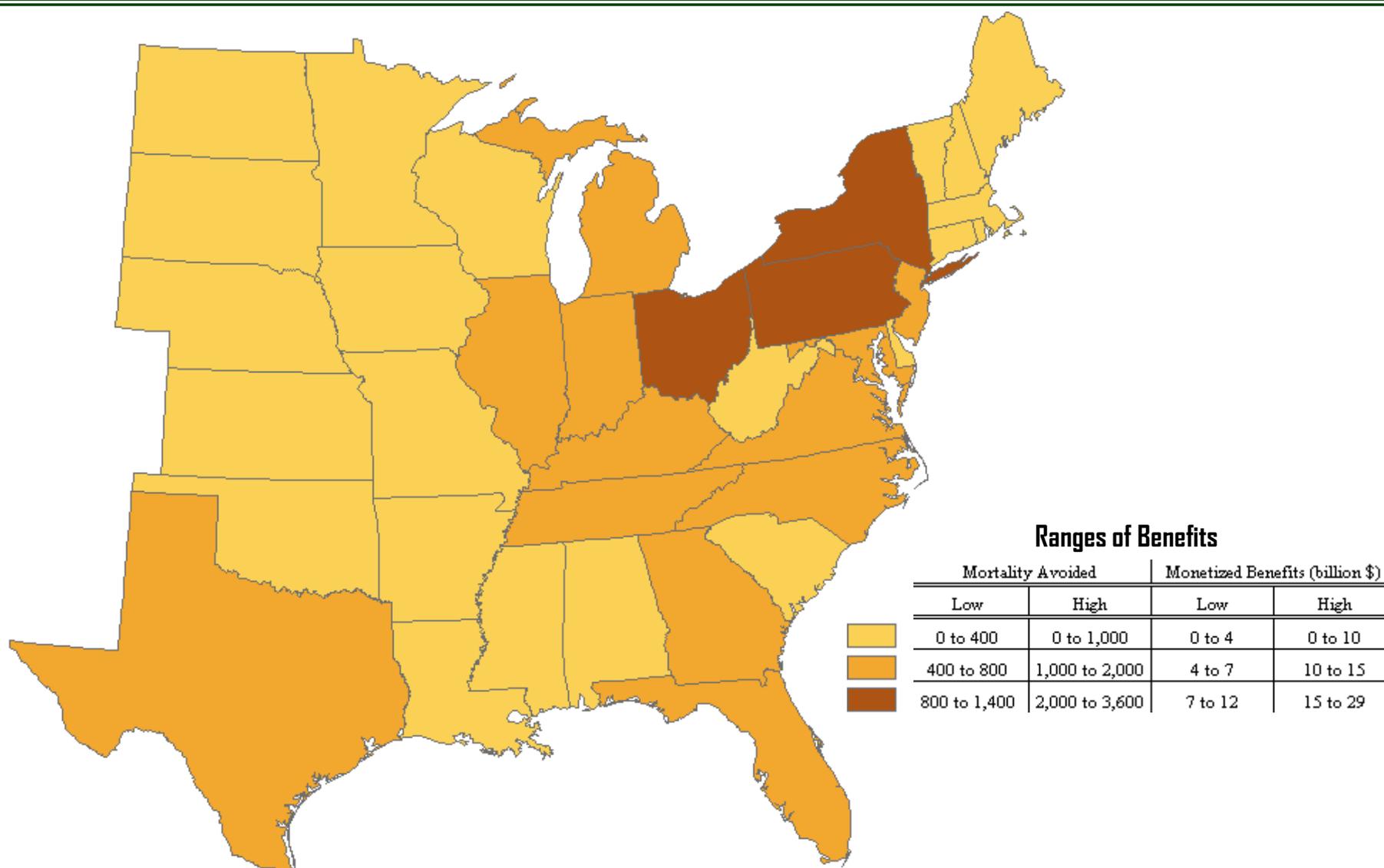
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# Benefits Outweigh Costs

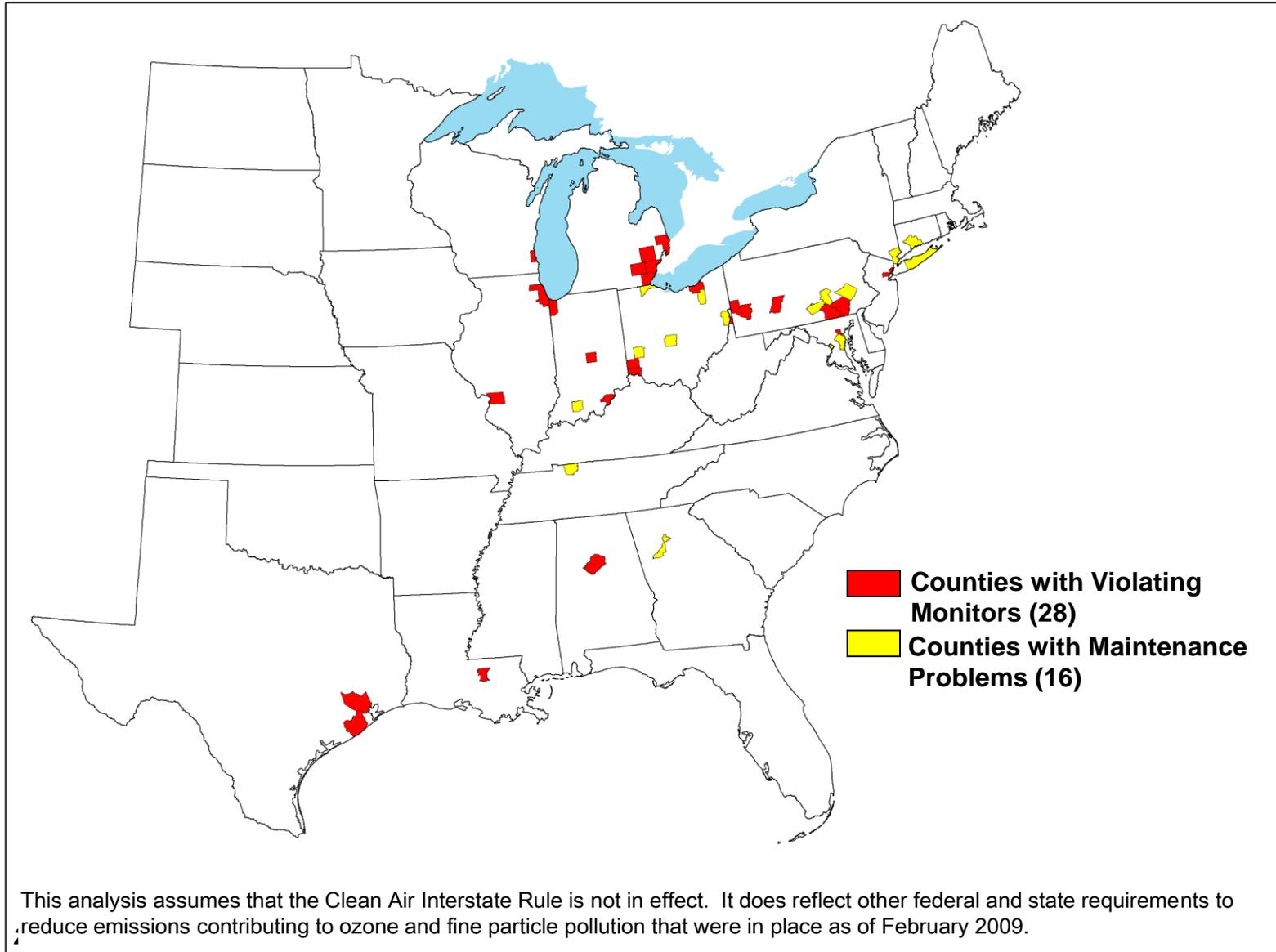
- EPA estimates the annual benefits from the proposed rule range between \$120-\$290 billion (2006 \$) in 2014.
  - Most of these benefits are public health-related.
  - \$3.6 billion are attributable to visibility improvements in areas such as national parks and wilderness areas.
  - Other nonmonetized benefits include reductions in mercury contamination, acid rain, eutrophication of estuaries and coastal waters, and acidification of forest soils.
- EPA estimates annual compliance costs at \$2.8 billion in 2014.
- Modest costs mean small effects on electricity generation. EPA estimates that in 2014:
  - Electricity prices increase less than 2 percent.
  - Natural gas prices increase less than 1 percent.
  - Coal use is reduced by less than 1 percent.

# Billions of Dollars of Health Benefits in 2014

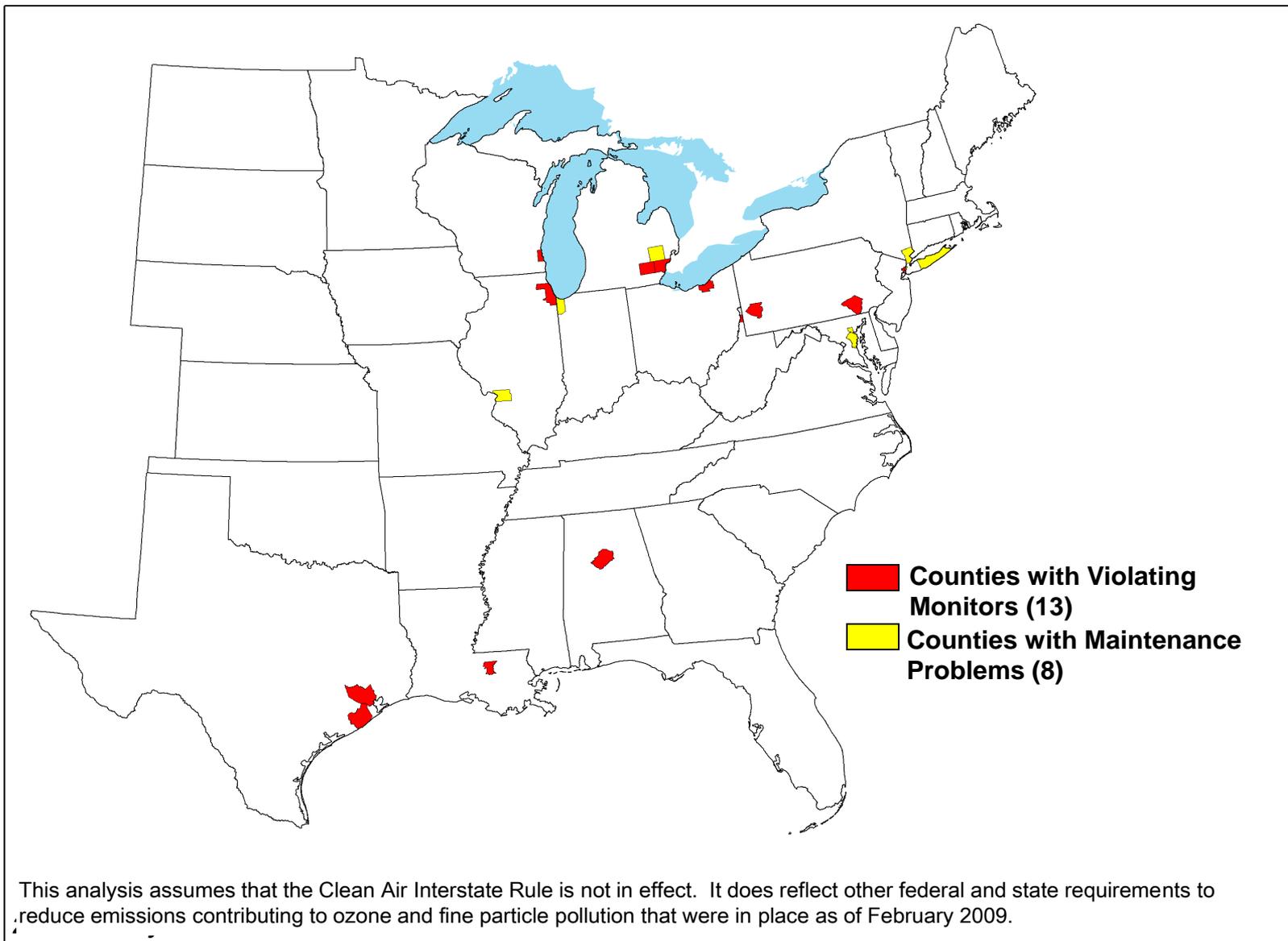


Maine, New Hampshire, Vermont, Rhode Island, North and South Dakota receive benefits and are not in the Transport Rule region. Transport Rule RIA, Table A-4 and A-5; mortality impacts estimated using Laden et al. (2006), Levy et al. (2005), Pope et al. (2002) and Bell et al. (2004); monetized benefits discounted at 3%

# Counties with Monitors Projected to Have Ozone and/or PM<sub>2.5</sub> Air Quality Problems in 2014 Without the Proposed Transport Rule



# Counties with Monitors Projected to Have Ozone and/or PM<sub>2.5</sub> Air Quality Problems in 2014 With the Proposed Transport Rule



# Ozone: More Needs to Be Done

- EPA is moving quickly on this rule to ensure the earliest public health protection and respond to the court as soon as possible.
- This proposal would achieve reductions in seasonal ozone levels.
- Additional emissions reductions will be needed for the nation to attain the existing ozone standard and any upcoming 2010 ozone standards.
- EPA has already started the required analyses to determine the responsibility of upwind states for ozone problems projected to remain after today's rule. We anticipate proposing a determination to address pollution transport for any upcoming ozone standard in 2011 and finalizing it in 2012.
- EPA plans to identify any needed emissions reductions from upwind states in time to help downwind states attain the reconsidered ozone standards.

# EPA's Ongoing Commitment to Assist States

- With today's action, EPA is making an ongoing commitment to help states implement the "good neighbor" provision of the Clean Air Act, which prohibits each state from significantly contributing to air quality problems in another state.
- This rule proposes a procedure for determining each upwind state's control responsibility that EPA can apply to any revised air quality standard. Each time air pollution standards (NAAQS) are changed, if interstate pollution transport contributes to the air quality problem, EPA will evaluate whether new emission reductions will be required from upwind states.
- The Clean Air Act requires states to submit plans to eliminate significant interstate pollution transport before they submit plans to meet ambient air quality standards. By determining the amount of emissions that upwind states must eliminate in advance of the time that state pollution transport plans are due, EPA will promote timely reductions in pollution transport. When downwind states design their plans to meet the air quality standards, they will know how much upwind state control is required.
- This will enable the Clean Air Act to work as intended and will help downwind states to attain health-based standards sooner.

[www.epa.gov/airtransport](http://www.epa.gov/airtransport)